

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 24, 25, 30-33, 37, 43, 48, and 49, as shown in the following listing of claims, which will replace all prior versions and listings of claims in the application.

Listing of claims:

1 (currently amended). A method for isolating plasmid DNA from genomic DNA in a DNA containing material which comprises plasmid DNA and genomic DNA, comprising the steps of:

- (i) extracting the plasmid DNA into butanol by mixing the material with butanol, a chaotrope, and water under conditions to denature the genomic DNA and forming an aqueous phase and a butanol phase,
 - (a) wherein ~~[[the]]~~ genomic DNA is in the aqueous phase and ~~[[the]]~~ plasmid DNA is in the butanol phase, ~~such that most of the plasmid DNA is isolated from the genomic DNA;~~ and
 - (b) wherein the conditions to denature the genomic DNA comprise basic conditions or a temperature of at least 65°C; and
- (ii) recovering the plasmid DNA from the butanol phase.

2 (canceled).

3 (previously presented). The method of claim 1, wherein the conditions to denature the genomic DNA comprise basic conditions in which a base is present.

4 (previously presented). The method of claim 1, wherein the butanol is n-butanol, 2-methylpropanol, or butan-2-ol.

5 (previously presented). The method of claim 1, wherein the chaotrope is selected from the group consisting of guanidine hydrochloride, guanidine thiocyanate, sodium perchlorate, and mixtures thereof.

6 (previously presented). The method of claim 1, wherein the chaotrope comprises guanidine hydrochloride.

7 (previously presented). The method of claim 3, wherein the base comprises a hydroxide.

8 (original). The method of claim 7, wherein the hydroxide comprises sodium hydroxide.

9 (previously presented). The method of claim 3, wherein the butanol, the chaotrope, the base and the water are combined to form an extraction mixture, and extraction step (i) comprises mixing the extraction mixture with the plasmid DNA-containing material.

10 (previously presented). The method of claim 1, wherein the amount of butanol is in the range from 20 to 70% based on the volume of the combination of butanol, chaotrope and water.

11 (original). The method of claim 10, wherein the amount of the butanol is in the range from 35 to 50%.

12 (original). The method of claim 11, wherein the amount of the butanol is about 42%.

13 (previously presented). A method for isolating plasmid DNA from a DNA containing material which comprises plasmid DNA and genomic DNA, comprising the steps of:

- i extracting the plasmid DNA into butanol by mixing the material with butanol, a chaotrope, and water under conditions to denature the genomic DNA,
 - a. wherein the chaotrope is present at a concentration of from 0.7M to 1.2M based on the combination of butanol, chaotrope and water; and

- b. wherein the conditions to denature the genomic DNA comprise basic conditions or a temperature of at least 65°C; and
- ii. recovering the plasmid DNA from the butanol.

14 (previously presented). A method for isolating plasmid DNA from a DNA containing material which comprises plasmid DNA and genomic DNA, comprising the steps of:

- i extracting the plasmid DNA into butanol by mixing the material with butanol, a chaotrope, and water under conditions to denature the genomic DNA,
 - a. wherein the concentration of the chaotrope is about 0.9M; and
 - b. wherein the conditions to denature the genomic DNA comprise basic conditions or a temperature of at least 65°C; and
- ii. recovering the plasmid DNA from the butanol.

15 (previously presented). The method of claim 1, wherein the recovery step (ii) comprises mixing the butanol phase, which comprises plasmid DNA, with a precipitating agent that can precipitate the plasmid DNA from the butanol, and separating the precipitated plasmid DNA from the butanol.

16 (original). The method of claim 15, wherein the recovery step (ii) further comprises a washing step in which the precipitated plasmid DNA is washed.

17 (original). The method of claim 15 or claim 16, wherein the precipitating agent comprises an alcohol.

18 (original). The method of claim 17, wherein the alcohol is ethanol.

19 (previously presented). The method of claim 15, wherein the precipitating agent further comprises an acetate salt.

20 (original). The method of claim 19, wherein the acetate salt comprises sodium acetate.

21 (previously presented). The method of claim 1, which further comprises a step of separating the butanol and aqueous phases of step (i) prior to recovering the plasmid DNA.

22 (previously presented). The method of claim 21, wherein the step of separating the butanol and aqueous phases further comprises centrifugation of the mixture formed in step (i) to facilitate separation of the mixture into the butanol and aqueous phases.

23 (previously presented). The method of claim 1, wherein the DNA-containing material comprises a lysed or unlysed bacterial culture.

24 (currently amended). [[An]] A biphasic extraction mixture for selectively extracting plasmid DNA from genomic DNA in a DNA-containing material which comprises plasmid DNA and genomic DNA, in an extraction process, wherein the extraction mixture comprises butanol, a chaotrope, and water, wherein the butanol in the extraction ~~solution~~ mixture forms an organic phase, which comprises plasmid DNA, during the extraction process.

25 (currently amended). [[An]] A biphasic extraction mixture for selectively extracting plasmid DNA from genomic DNA in a DNA-containing material which comprises plasmid DNA and genomic DNA, in an extraction process, wherein the extraction mixture comprises butanol, a chaotrope, water, and a base, wherein the butanol in the extraction ~~solution~~ mixture forms an organic phase, which comprises plasmid DNA, during the extraction process.

26 (original). The extraction mixture of claim 25, wherein the base comprises a hydroxide.

27 (original). The extraction mixture of claim 26, wherein the hydroxide comprises sodium hydroxide.

28 (previously presented). The extraction mixture of claim 24, wherein the butanol is n-butanol, 2-methylpropanol, or butan-2-ol.

29 (previously presented). The extraction mixture of claim 24, wherein the butanol constitutes from 20 to 70% based on the volume of the extraction mixture.

30 (currently amended). ~~[[An]]~~ A biphasic extraction mixture for selectively extracting plasmid DNA from a DNA-containing material which comprises plasmid DNA and genomic DNA, in an extraction process, wherein the extraction mixture comprises butanol, a chaotrope, and water, wherein the butanol constitutes from 35 to 50 % of the extraction mixture and wherein the butanol in the extraction ~~solution~~mixture forms an organic phase, which comprises plasmid DNA, during the extraction process.

31 (currently amended). ~~[[An]]~~ A biphasic extraction mixture for selectively extracting plasmid DNA from a DNA-containing material which comprises plasmid DNA and genomic DNA, in an extraction process, wherein the extraction mixture comprises butanol, a chaotrope, and water, wherein the butanol constitutes about 42% of the extraction mixture and wherein the butanol in the extraction ~~solution~~mixture forms an organic phase, which comprises plasmid DNA, during the extraction process.

32 (currently amended). The biphasic extraction mixture of claim 24, wherein the chaotrope is selected from the group consisting of guanidine hydrochloride, guanidine thiocyanate, sodium perchlorate, and mixtures thereof.

33 (currently amended). The biphasic extraction mixture of claim 32, wherein the chaotrope comprises guanidine hydrochloride.

34 (previously presented). An extraction mixture for selectively extracting plasmid DNA from a DNA-containing material which comprises plasmid DNA and genomic DNA, which extraction mixture comprises butanol, a chaotrope, and water, wherein the concentration of chaotrope in the extraction mixture is from 0.7M to 1.2M.

35 (previously presented). An extraction mixture for selectively extracting plasmid DNA from a DNA-containing material which comprises plasmid DNA and genomic DNA, which extraction mixture comprises butanol, a chaotrope, and water, wherein the concentration of the chaotrope in the extraction mixture is about 0.9M.

36 (canceled).

37 (currently amended). A method for isolating plasmid DNA from genomic DNA in a DNA containing material which comprises plasmid DNA and genomic DNA, comprising the steps of:

- i. extracting the plasmid DNA into butanol by mixing the material with butanol, a chaotrope, and water under conditions to denature the genomic DNA and forming an aqueous phase and a butanol phase, wherein the genomic DNA is in the aqueous phase and the plasmid DNA is in the butanol phase, ~~such that most of the plasmid DNA is isolated from the genomic DNA;~~ and
- ii. recovering the plasmid DNA from the butanol phase.

38 (previously presented). The method of claim 1, wherein the butanol, the chaotrope, and the water are combined to form an extraction mixture, and extraction step (i) comprises mixing the extraction mixture with the plasmid DNA-containing material.

39 (previously presented). The method of claim 1, wherein the chaotrope is present at a concentration of from 0.7M to 1.2M based on the combination of butanol, chaotrope and water.

40 (previously presented). The method of claim 39, wherein the concentration of the chaotrope is about 0.9M.

41 (previously presented). The extraction mixture of claim 29, wherein the butanol constitutes from 35 to 50 % of the extraction mixture.

42 (previously presented). The extraction mixture of claim 41, wherein the butanol constitutes about 42% of the extraction mixture.

43 (currently amended). ~~The extraction mixture of claim 24~~An extraction mixture for selectively extracting plasmid DNA from genomic DNA in a DNA-containing material which comprises plasmid DNA and genomic DNA, in an extraction process, wherein the extraction mixture comprises butanol, a chaotrope, and water, wherein the butanol in the extraction solution forms an organic phase during the extraction process, wherein the concentration of chaotrope in the extraction mixture is from 0.7M to 1.2M.

44 (previously presented). The extraction mixture of claim 43, wherein the concentration of the chaotrope in the extraction mixture is about 0.9M.

45 (previously presented). The extraction mixture of claim 24, which further comprises a base.

46 (previously presented). The extraction mixture of claim 45, wherein the base comprises a hydroxide.

47 (previously presented). The extraction mixture of claim 46, wherein the hydroxide comprises sodium hydroxide.

48 (currently amended). The method of claim 1, wherein ~~the genomic DNA is substantially in the aqueous phase and the plasmid DNA is substantially in the butanol phase~~

49 (currently amended). The method of claim 37, wherein ~~the genomic DNA is substantially in the aqueous phase and the plasmid DNA is substantially in the butanol phase.~~